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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/695,074

10/28/2003

Roy A. Mangano

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EXAMINER

RIVELL, JOHN A

ART UNIT

PAPER NUMBER

3753

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

03/12/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/695,074

Applicant(s)

MANGANO ET AL.

Examiner

John Rivell

Art Unit

3753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10/28/03 (application).
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

Claims 1-26 are pending.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 3, 4, 12, 13, and 14 are rejected under 35 U.S.C. §102 (b) as being anticipated by Brown et al. (U.S. Pat. No. 3,965,689).

In the claims, the recitation “for a cryogen cooled superconducting magnet” is a statement of intended use bearing no patentable weight. Additionally, as set forth in M.P.E.P. §2115 “[i]nclusion of material or article worked upon by a structure being claimed does not impart patentability to the claims.’ *In re Young*, 75 F.2d 996, 25 USPQ 69 (CCPA 1935) (as restated in *In re Otto*, 312 F.2d 937, 136 USPQ 458, 459 (CCPA 1963)).” Thus the recitations concerning the specific fluid used, e.g. helium afford no patentable weight.

The patent to Brown et al. discloses in the sole figure a “zero backflow vent assembly ... having a cryogen gas vent (12) attached to the (fluid) pressure vessel (10) and connected to an exhaust vent (12) comprising: a valve (at valve head 22) in the cryogen gas vent (16) interposed between the (fluid) pressure vessel (10) and the exhaust vent (46, 48,50); said valve (head 22) opening in the event of an undesired pressure buildup in the (fluid) pressure vessel (10) and closing when the pressure inside the (fluid) pressure vessel (10) has subsided to safe levels” as recited in claim 1.

Regarding claim 2, in Brown et al., "the valve is comprised of a valve seat (20) integrated with the vent assembly (at pipe 16)" as recited.

Regarding claim 3, in Brown et al., "the valve is further comprised of: a valve face (at head 22); means (spring 26) for alternately permitting the valve face to move towards the exhaust vent (46) in the event of an undesired pressure buildup (at the inlet) and to seal the valve face (at 22) against the valve seat (20) when the pressure inside the (fluid) pressure vessel (10) has subsided to safe levels" as recited.

Regarding claim 4, in Brown et al., "a spring (26) comprises the means for alternately permitting the valve face (at 22) to move towards the exhaust vent (46) in the event of an undesired pressure buildup and to seal the valve face (22) against the valve seat (20) when the pressure inside the (fluid) pressure vessel (10) has subsided to safe levels" as recited.

Regarding claim 12, Brown et al., discloses a "zero backflow vent assembly for a pressure relieving vent system... having a cryogen gas vent (12) attached to the cryostat (10) and connected to an exhaust vent (12, at 16, 46), said cryogen gas vent (12) being installed to vent cryogen gas from the cryostat (10) to the atmosphere in the event of an undesired pressure buildup comprising: a spring (26) loaded valve (22) in the cryogen gas vent (12) interposed between the pressure vessel (10) and the exhaust vent (at 46); said valve (12) opening in the event of an undesired pressure buildup in the pressure vessel (10) and closing when the pressure inside the pressure vessel (10) has subsided to safe levels" as recited.

Regarding claim 13, in Brown et al., "the spring (26) loaded valve (22) is further comprised of a valve seat (20) integrated with the cryogen gas vent (12, at 16)" as recited.

Regarding claim 14, in Brown et al., "the valve (22) further comprises: a valve face (at head 22), said valve face being pressed against the valve seat (20) during normal operation...; said spring (26) alternately permitting the valve face to move towards the exhaust vent (at 46) in the event of an undesired pressure buildup and sealing the valve face against the valve seat (20) when the pressure inside the pressure vessel (10) has subsided to safe levels" as recited.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claims 5-10, 15-20 and 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown et al. in view of Ashton.

The patent to Brown et al. discloses all the claimed features with the exception of having "the spring enclosed in a plunger assembly" (claims 5, 15 and 24), a "spring backing plate is attached to the cryogen gas vent using a threaded rod" (claims 7, 17

and 22), which “rod is threaded through a threaded aperture in the cryogen gas vent” (claims 8, 18, 22”, which “spring is adjustable by either moving the spring backing plate either closer to or further away from the valve face by threading or unthreading the threaded rod” (claims 9, 19 and 22)”.

The patent to Ashton discloses that it is known in the art to employ a spring (H) loaded valve (G) mounted in a housing between a perpendicular inlet and outlet, which spring loaded valve (G) includes a “plunger assembly” at telescoping elements of the valve head (G) and guide element (D) and a backing plate ( $h^1$ ) attached to the housing (A) by a threaded rod (F) whose position is adjustable to simultaneously adjust the position of the backing plate ( $h^1$ ) which correspondingly adjusts the spring bias force closing the valve thus adjusting the pressure value relieved from the inlet to the outlet for the purpose of accommodating perpendicular plumbing requirements between the inlet and outlet and maintaining a spring bias adjustment as well as protection of the spring from the fluid with the telescoping “plunger assembly”.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Brown et al. a valve element including a perpendicular inlet and outlet, which valve element is spring biased closed by a spring element whose bias force is adjusted by a threaded rod attaching a spring backing plate to the housing for the purpose of accommodating perpendicular plumbing requirements between the inlet and outlet and maintaining a spring bias adjustment as well as protection of the spring from the fluid with the telescoping “plunger assembly” as recognized by Ashton.

Regarding claims 6 and 16, in the device of the combination, “the spring (will be) interposed between the spring backing plate (such as at  $h^1$  of Ashton or at 28 of Brown et al.) and the back of the valve face” as recited.

Regarding claims 10 and 20, in the device of the combination, the "gas vent (in the perpendicular housing taught by Ashton) has a spring recess (such as outside of guide element (D) of Ashton) that partially surrounds the zero backflow assembly" as recited.

Regarding claims 19 and 25, in the device of the combination, "the length of the spring (such as spring (H) of Ashton or spring 26 of Brown et al.) is adjustable by either moving the spring backing plate (ay h<sup>1</sup> of Ashton or 28 of Brown et al.) either closer to or further away from the valve face by threading or unthreading the threaded rod" as recited.

Regarding claim 23, in the device of the combination, "the spring (at (H) of Ashton or 26 of Brown et al.) alternately permits the valve face to move towards the exhaust vent in the event of an undesired pressure buildup and seals the valve face (at 22 of Brown et al.) against the valve seat (20 of Brown et al.) when the pressure inside the pressure vessel (10) has subsided to safe levels" as recited.

Claims 11, 21 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown et al. in view of Ashton as applied to claims 5-10, 15-20 and 22-25 above, further in view of Myers.

The patent to Brown et al., as modified by Myers, discloses all the claimed features with the exception of having "the zero backflow vent assembly positioned downstream of a burst disk assembly".

The patent to Myers discloses that it is known in the art to employ a spring loaded (column 3, lines 3-20) pressure relief valve assembly 40 "downstream of a burst disk assembly" at rupture disk 30 for the purpose of initially providing sealed closure of the flow path with a rupture disk prior to relief pressure values being obtained in the pressure vessel at 10 and to then, after rupture of the disk, continue operation of closing

the fluid vent path when pressure values fall to values below the relief pressure of the relief valve.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Brown et al., as modified by Ashton, a rupture disk assembly upstream of the relief valve therein for the purpose of providing an initially sealed closure of the fluid vent path prior to a first time rise to relief pressure within the tank 10 as recognized by Myers.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Rivell whose telephone number is (571) 272-4918. The examiner can normally be reached on Mon.-Thur. from 6:30am-5:00pm (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eric Keasel can be reached on (571) 272-4929. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



**John Rivell**  
**Primary Examiner**  
**Art Unit 3753**

j.r.